Summary of Overexpressor G482, Family CAAT

Mendel Biotechnology, Inc.

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Published Information

G482 is equivalent to *AtHAP3b* which was identified by Edwards et al. (1998) as an EST with homology to the yeast gene *HAP3b*. Their northern blot data suggests that *AtHAP3b* is expressed primarily in roots. No other functional information regarding G482 is publicly available.

Mendel Discoveries

The function of G482 was analyzed at Mendel through its ectopic overexpression in plants. G482 overexpressors are more tolerant to high NaCl in a germination assay. Further experiments should be done to determine the utility of this degree of NaCl tolerance under field conditions.

RT-PCR analysis of endogenous levels of G482 transcripts indicate that this gene is expressed constitutively in all tissues tested. A cDNA array experiment supports the RT-PCR derived tissue distribution data. G482 is not induced above basal levels in response to any environmental stress treatments tested.

Closely Related Genes from Other Species

The closest homology in the non-Arabidopsis plant database is within the conserved domain of G482 and therefore no potentially orthologous genes are available in the public domain.

Utilities

The potential utilities of this gene include the ability to confer salt tolerance during the germination stage of a crop plant. This would most likely impact survivability and yield. Evaporation of water from the soil surface causes upward water movement and salt accumulation in the upper soil layer, where the seeds are placed. Thus, germination normally takes place at a salt concentration much higher than the mean salt concentration in the whole soil profile.

Gene and Trait Disclosure Chronology

November 1999 Analyzed as Overexpressor

November 1999 Increased tolerance to high salt

References

Edwards D, et al. ÿÿMultiple genes encoding the conserved CCAAT-box transcription factor complex are expressed in Arabidopsis. Plant Physiol. 1998 Jul;117(3):1015-22.

Keywords

Salt, Germination

Knockout Status

KO DNA insertion not identified

Plasmid ID	P47
Cloning Vector	pMEN20
Cloning Site	SalINotI
Source DNA	N97233
Bacterial Strain	DH5a

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Patent Information
Plant Trait Modification I, 11/17/99
Polynucleotides for Seed Trait Alteration, 3/22/00

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